

Awesome Abilities

Purpose

Students will give examples of how human beings use technology to match or exceed many of the abilities of other species.

Materials

For the teacher: chalk, chalkboard

For each pair of students: paper, pencil, scissors, cardstock copy of Black Line Master (BLM) *Ability Memory*, access to the Internet and presentation software.

Activity

A. Pre-Activity Discussion

1. List the words “dolphin,” “bird,” “fish,” “dog,” and “plant” on the board.
2. Ask students if these organisms have abilities that humans do not naturally possess.
3. Have students brainstorm; list their ideas on the board (e.g., echolocation, flight, breathing under water, extremely good sense of smell, photosynthesis).
4. Ask students: “Are there ways that humans can match or exceed the abilities listed on the board?”
5. Discuss with students how humans use technology to meet or exceed the abilities of other species.

B. Ability Memory Game

1. Divide students into pairs and pass out the BLM *Ability Memory* and scissors to each pair of students.
2. Have students cut out the squares.
3. Have students shuffle the stack of cards and randomly place them face down in rows.
4. Tell students that they will use the cards to play a game.
5. Write the following rules for the game on the board:
 - Flip two cards over at a time
 - Try to match the organism’s ability with the technology that allows humans to match or exceed the ability.
 - If the animal ability matches the technology, you may keep the pair of cards.
 - If the ability does not match the technology, flip the cards back over.

Technology Literacy Standards

	I	II	III	IV	V	VI	VII
1							
2							
3							
4			X				
5							
6							
7		X					
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12							
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16							

X = This Technology Literacy Standard is addressed in this lesson.

= This Technology Literacy Standard is not addressed in this lesson.

- Take turns flipping cards until all pairs have been matched.
- 6. Allow students to begin playing and monitor each group as they work.
- 7. When students finish playing the game, have them share the matches they made with the class.
- 8. Discuss each organism's ability and the technology humans use to match or exceed it.

C. Extension Activity

1. Have students choose one of the human technologies listed on the ability memory cards.
2. Students will research on the Internet how the technology was initially developed, such as dolphin echolocation inspiring sonograms.
3. Students will create a slide show using presentation software.
4. Students will present their project to the class.

Classroom Assessment ---

Basic Concepts and Processes

While students are playing the game, circulate through the room asking questions such as:



What kinds of abilities do other organisms have that humans do not?

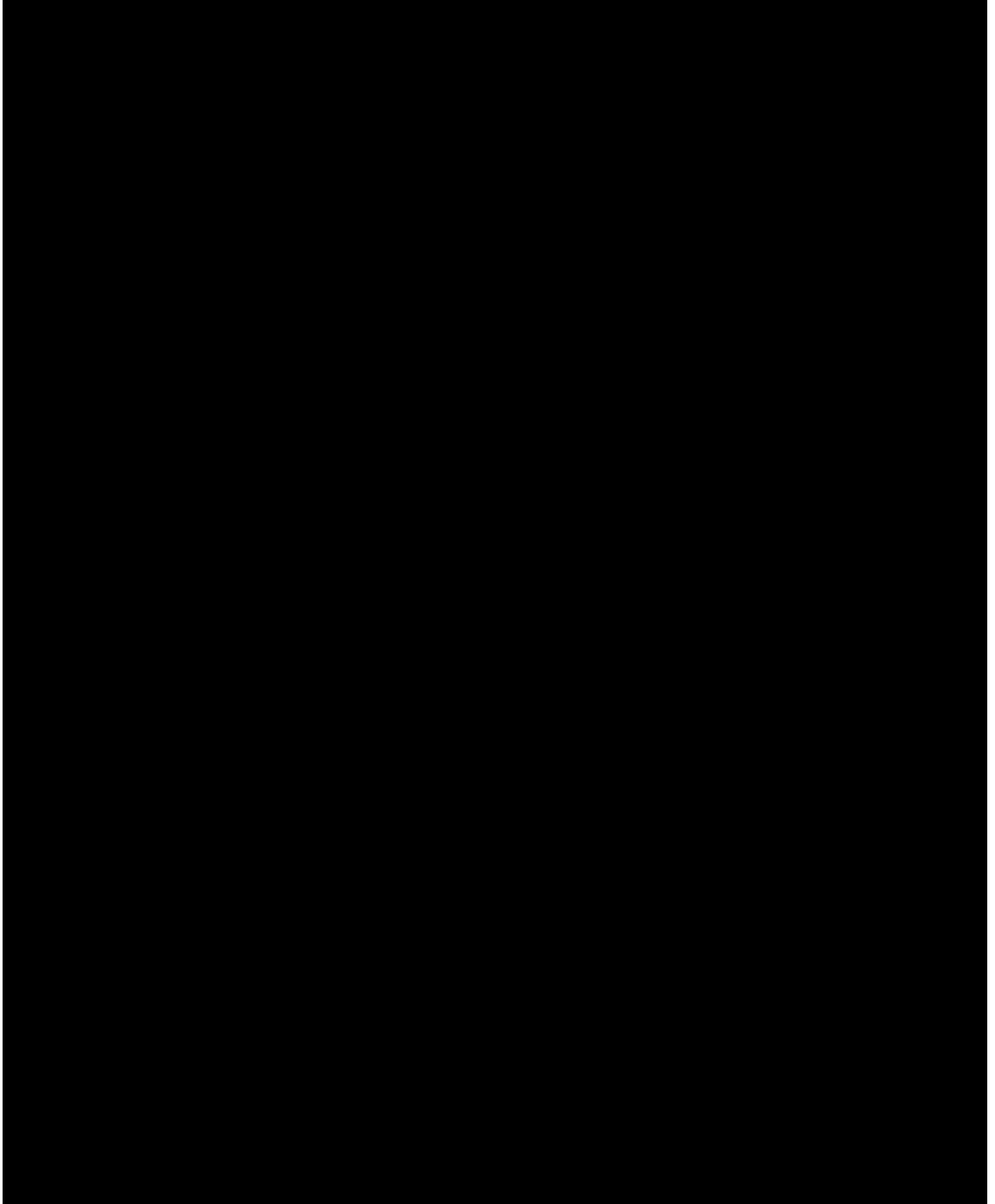


Give an example of how humans match or exceed the abilities of other species.



During the game, how did you match the ability with the technology that allows humans to meet or exceed it?

Ability Memory



Ability Memory

Teacher Directions

Copy the BLM *Ability Memory* onto cardstock for each pair of students and have students cut out the cards. Have students use the cards to play the memory game.

Answer Key

Ensure that students accurately pair the organism's ability with the technology that enables humans to match or exceed the ability. Here are possible matches:

Fish breathe underwater – Humans use SCUBA gear.

Birds fly – Humans use planes.

Dolphins echolocate – Humans use sonar.

Horses run quickly and for long distances – Humans use cars.

Seals dive deep in the ocean – Humans use submarines.

Cats and dogs have very good low-light vision - Humans use low-light goggles.

Whales have a thick layer of blubber to keep them warm in the water – Humans use wetsuits.

Dogs have a keen sense of smell – Humans use chemical sniffers.

Hummingbirds can hover in the air – Humans use helicopters.

Spiders make silk, an extremely strong fiber – Humans use chemistry to make nylon.

Plants capture the sun's energy through photosynthesis – Humans use solar panels.

Electric fish sense predators near their body with electrical fields – Humans use radar.

Many organisms sense magnetic fields – Humans use compasses.